

3. Funding and Costs

Introduction

Congress has appropriated a federal budget of \$2.3 billion for the CCT Program. These funds have been committed to demonstration projects selected through five competitive solicitations. As of September 30, 1999, the program consisted of 40 active or completed projects. These 40 projects have resulted in a combined commitment by the federal government and the private sector of nearly \$5.4 billion. DOE's cost-share for these projects exceeds \$1.8 billion, or approximately 34 percent of the total. The project participants (i.e., the non-federal-government participants) are providing the remaining \$3.5 billion, or 66 percent of the total. Exhibit 3-1 summarizes the total costs of CCT projects as well as cost-sharing by DOE and project participants.

The data used to prepare Chapter 3 is based on the 40 projects that were active in the CCT Program as of September 30, 1999. Since then, the projects sponsored by NOXSO Corporation and Custom Coals International have ended. Both projects were in bankruptcy and were not able to restructure and continue work under the CCT Program. Future reports will not include data for these two projects.

Exhibit 3-1
CCT Project Costs and Cost-Sharing
(Dollars in Thousands)

	Total Project Costs	%	Cost-Share Dollars		Cost-Share Percent	
			DOE^b	Participants	DOE	Participants
Subprogram						
CCT-I	844,363	16	239,640	604,723	28	72
CCT-II	318,577	6	139,229	179,348	44	56
CCT-III	1,408,141	26	618,324	789,817	44	56
CCT-IV	1,037,815	19	477,058	560,757	46	54
CCT-V	1,765,009	33	360,982	1,404,027	20	80
Total ^a	5,373,905	100	1,835,233	3,538,672	34	66
Application Category						
Advanced Electric Power Generation	2,864,284	53	1,118,865	1,745,419	39	61
Environmental Control Devices	702,922	13	294,272	408,650	42	58
Coal Processing for Clean Fuels	519,196	10	230,024	289,172	44	56
Industrial Applications	1,287,503	24	192,072	1,095,431	15	85
Total ^a	5,373,905	100	1,835,233	3,538,672	34	66

^a Totals may not add due to rounding.

^b DOE share does not include \$52,986,136 obligated for withdrawn projects and audit expenses.

Program Funding

General Provisions

In the CCT Program, the federal government's contribution can not exceed 50 percent of the total cost of any individual project. The federal government's funding commitments and other terms of federal assistance are represented in a cooperative agreement negotiated for each project in the program. Terms of the cooperative agreement also include a plan for the federal government to recoup up to the full amount of the federal government's contribution. This approach enables taxpayers to benefit from commercially successful projects. This is in addition to the benefits

derived from the demonstration and commercial deployment of technologies that improve environmental quality and promote the efficient use of the nation's coal resources.

The project participant has primary responsibility for the project. The federal government monitors project activities, provides technical advice, and assesses progress by periodically reviewing project performance with the participant. The federal government also participates in decision making at major project junctures negotiated into the cooperative agreement. Through these activities, the federal government ensures the efficient use of public funds in the achievement of individual project and overall program objectives.

Congress has provided program funding through appropriation acts and adjustments. (See Appendix A for legislative history and excerpts from the relevant funding legislation.)

Exhibit 3-2 presents the allocation of appropriated CCT Program funds (after adjustment) and the amount available for each CCT solicitation. Additional activities funded by CCT Program appropriations are the Small Business Innovation Research (SBIR) Program, the Small Business Technology Transfer (STTR) Program, and CCT Program direction. The SBIR Program implements the Small Business Innovation Development Act of 1982 and provides a role for small, innovative firms in selected research and development (R&D) areas. The STTR Program implements the Small Business Technology Transfer Act of 1992 that establishes a pilot program and funding for small business concerns performing cooperative R&D efforts.

The CCT program direction budget provides for the management and administrative costs of the program and includes federal employees' salaries, benefits and travel, site support services, and services provided by national laboratories and private firms.

Availability of Funding

Although all funds necessary to implement the entire CCT Program were appropriated by Congress prior to FY1990, the legislation also directed that these funds be made available (i.e., apportioned) to DOE on a time-phased basis. Exhibit 3-3 depicts this apportionment of funding to DOE. Exhibit 3-3 also shows the program's yearly funding profile by appropriations act and by subprogram. Funds can be transferred among subprogram budgets to meet project and program needs.

Exhibit 3-2
Relationship between Appropriations and Subprogram Budgets
for the CCT Program
(Dollars in Thousands)

Appropriation Enacted	Subprogram	Adjusted Appropriations	SBIR & STTR Budgets ^a	Program Direction Budget	Projects Budget
P.L. 99-190	CCT-I	380,600	4,902	101,767	273,931
P.L. 100-202	CCT-II	473,959	6,781	32,512	434,666
P.L. 100-446	CCT-III	574,998	6,906	22,548	545,544
P.L. 101-121 ^b	CCT-IV	427,000	7,065	25,000	394,935
P.L. 101-121 ^b	CCT-V	450,000	5,427	25,000	419,573
Total		2,306,557	31,081	206,827	2,068,649

^a Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.

^b P.L. 101-121 was revised by P.L. 101-512, 102-154, 102-381, 103-138, 103-332, 104-6, 104-208, 105-18, 105-83, 105-277, and 106-113.

Exhibit 3-3
Annual CCT Program Funding by Appropriations and Subprogram Budgets
(Dollars in Thousands)

Fiscal Year	1986-91	1992 ^e	1994 ^e	1995	1996	1997	1998	1999	2000	2001	2002	Total ^d
Adjusted Appropriations^a												
P.L. 99-190	397,600					(17,000)						380,600
P.L. 100-202	574,997						(101,000)	(40,000)	9,962	15,000	15,000	473,959
P.L. 100-446	574,998								(156,000)	156,000		574,998
P.L. 101-121 ^b	35,000	315,000	100,000	18,000	50,000	(91,000)						427,000
P.L. 101-121 ^b		100,000	125,000	19,121	100,000	105,879						450,000
Total	1,582,595	415,000	225,000	37,121	150,000	(2,121)	(101,000)	(40,000)	(146,038)	171,000	15,000	2,306,557
Subprogram Budgets												
CCT-I Projects	387,231			(18,000)	(18,000)	(33,000)	(15,000)	(14,900)	(14,400)			273,931
CCT-II Projects	535,704						(101,000)	(40,000)	9,962	15,000	15,000	434,666
CCT-III Projects	545,544								(156,000)	156,000		545,544
CCT-IV Projects	9,875	311,063	98,450	17,622	48,925	(91,000)						394,935
CCT-V Projects		74,062	123,063	18,719	97,850	105,879						419,573
Projects Subtotal	1,478,354	385,125	221,513	18,341	128,775	(18,121)	(116,000)	(54,900)	(160,438)	171,000	15,000	2,068,649
Program Direction	85,527	25,000		18,000	18,000	16,000	15,000	14,900	14,400			206,827
Fossil Energy Subtotal	1,563,881	410,125	221,513	36,341	146,775	(2,121)	(101,000)	(40,000)	(146,038)	171,000	15,000	2,275,476
SBIR & STTR ^c	18,714	4,875	3,487	779	3,225							31,081
Total ^d	1,582,595	415,000	225,000	37,121	150,000	(2,121)	(101,000)	(40,000)	(146,038)	171,000	15,000	2,306,557

^a Shown are appropriations less amounts sequestered under the Gramm-Rudman-Hollings Deficit Reduction Act.

^b Shown is the fiscal year apportionment schedule of P.L. 101-121 as revised by P.L. 101-512, 102-154, 102-381, 103-138, 103-332, 104-6, 104-208, 105-18, 105-83, 105-277, and 106-113.

^c Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.

^d Totals may not appear to add due to rounding.

^e No changes were made to funding amounts in 1993.

Use of Appropriated Funds

There are five key financial terms used by the government to track the status and use of appropriated funds: (1) budget authority, (2) commitments, (3) obligations, (4) costs, and (5) expenditures. The definition of each of these terms is described below.

- **Budget Authority.** This is the legal authorization created by legislation (i.e., an appropriations act) that permits the federal government to obligate funds.
- **Commitments.** Within the context of the CCT Program, a commitment is established when DOE selects a project for negotiation. The commitment amount is equal to DOE's share of the project costs contained in the cooperative agreement.
- **Obligations.** The cooperative agreement for each project establishes funding increments, referred to as budget periods. The cooperative agreement defines the tasks to be performed in each budget period. An obligation occurs in the beginning of each budget period and establishes the incremental amount of federal funds available to the participant for use in performing tasks as defined in the cooperative agreement.
- **Costs.** A request for payment submitted by the project participant to the federal government for reimbursement of tasks performed under the terms of the cooperative agreement is considered a cost. Costs are equivalent to a bill for payment or invoice.
- **Expenditures.** Expenditures represent payment amounts to the project participant from checks drawn upon the U.S. Treasury.

The full government cost-share specified in the cooperative agreement is considered committed to each project. However, DOE obligates funds for the project in increments. Most projects are subdivided into several time and funding intervals, or budget periods. The number of budget periods is determined during negotiations and is incorporated into the cooperative agreement. DOE obligates sufficient funds at the beginning of each budget period to cover the government's cost-share for that period. This procedure limits the government's financial exposure and assures that DOE fully participates in the decision to proceed with each major phase of project implementation.

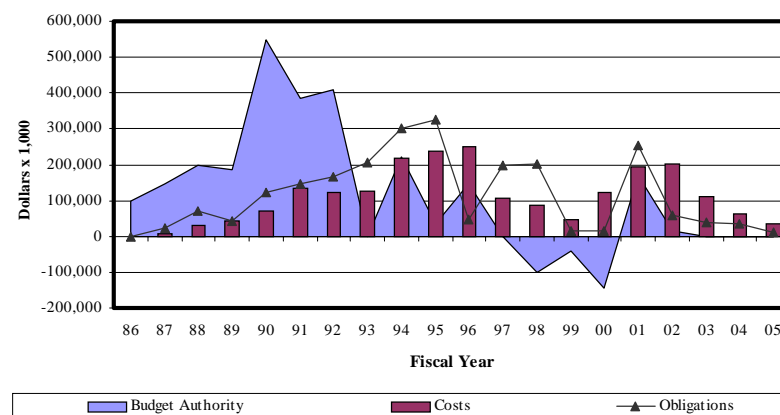
The overall financial profile for the CCT Program is presented in Exhibit 3-4. The graph shows actual performance for FY1986 through FY1999 and DOE estimates for FY2000 through program completion. Excluded from the graph are SBIR and STTR funds, as these are used and tracked separately from the CCT Program. The financial projections presented in Exhibit 3-4 are based on individual project schedules and budget periods as defined in the cooperative agreements and modifications. The negative Budget Authority values shown in Exhibit 3-4 result from rescission of \$101 million in FY1998, the deferral of \$40 million in FY1999, and the deferral of \$146 million in FY2000.

The financial status of the program through September 30, 1999, is presented by subprogram in Exhibit 3-5. SBIR and STTR funds are included in this exhibit to account for all funding. Exhibit 3-5 also indicates the apportionment sequence as modified by Public Law 106-113. These values represent the amount of budget authority available for the CCT Program.

Project Funding, Costs, and Schedules

Information for individual CCT projects, including funding and the status of key milestones, is provided in Section 5. An overview of project schedules and funding is presented in Exhibit 3-6.

Exhibit 3-4
CCT Financial Projections^a
as of September 30, 1999



^aIncludes changes resulting from P.L. 106-113.

Exhibit 3-5
Financial Status of the CCT Program as of September 30, 1999^c
(Dollars in Thousands)

Subprogram	Appropriations Allocated to Subprogram ^b	Apportioned to Date	Committed to Date	Obligated to Date	Cost to Date	Apportionment Sequence		
						FY	Annual	Cumulative
CCT-I	273,931	273,931	257,126	257,126	183,854	1986	99,400	99,400
CCT-II	434,666	404,666	171,198	172,026	165,275	1987	149,100	248,500
CCT-III	545,544	389,544	618,324	618,061	470,076	1988	199,100	447,600
CCT-IV	394,935	394,935	478,389	478,389	463,751	1989	190,000	637,600
CCT-V	419,573	419,573	363,182	148,331	15,840	1990	554,000	1,191,600
Projects Subtotal	2,068,649	1,882,649	1,888,219	1,673,933	1,298,796	1991	390,995	1,582,595
SBIR & STTR ^a	31,081	31,081	31,081	31,081	31,081	1992	415,000	1,997,595
Program Direction	206,827	206,827	192,427	190,847	187,806	1993	0	1,997,595
Total	2,306,557	2,120,557	2,111,727	1,895,861	1,517,683	1994	225,000	2,222,595
						1995	37,121	2,259,716
						1996	150,000	2,409,716
						1997	(2,121)	2,407,595
						1998	(101,000)	2,306,595
						1999	(40,000)	2,266,595
						2000	(146,038)	2,120,557
						2001	171,000	2,291,557
						2002	15,000	2,306,557

^a Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

^b Totals may not appear to add due to rounding

^c Includes changes from P.L. 106-113

Exhibit 3-6
CCT Project Schedules and Funding, by Application Category

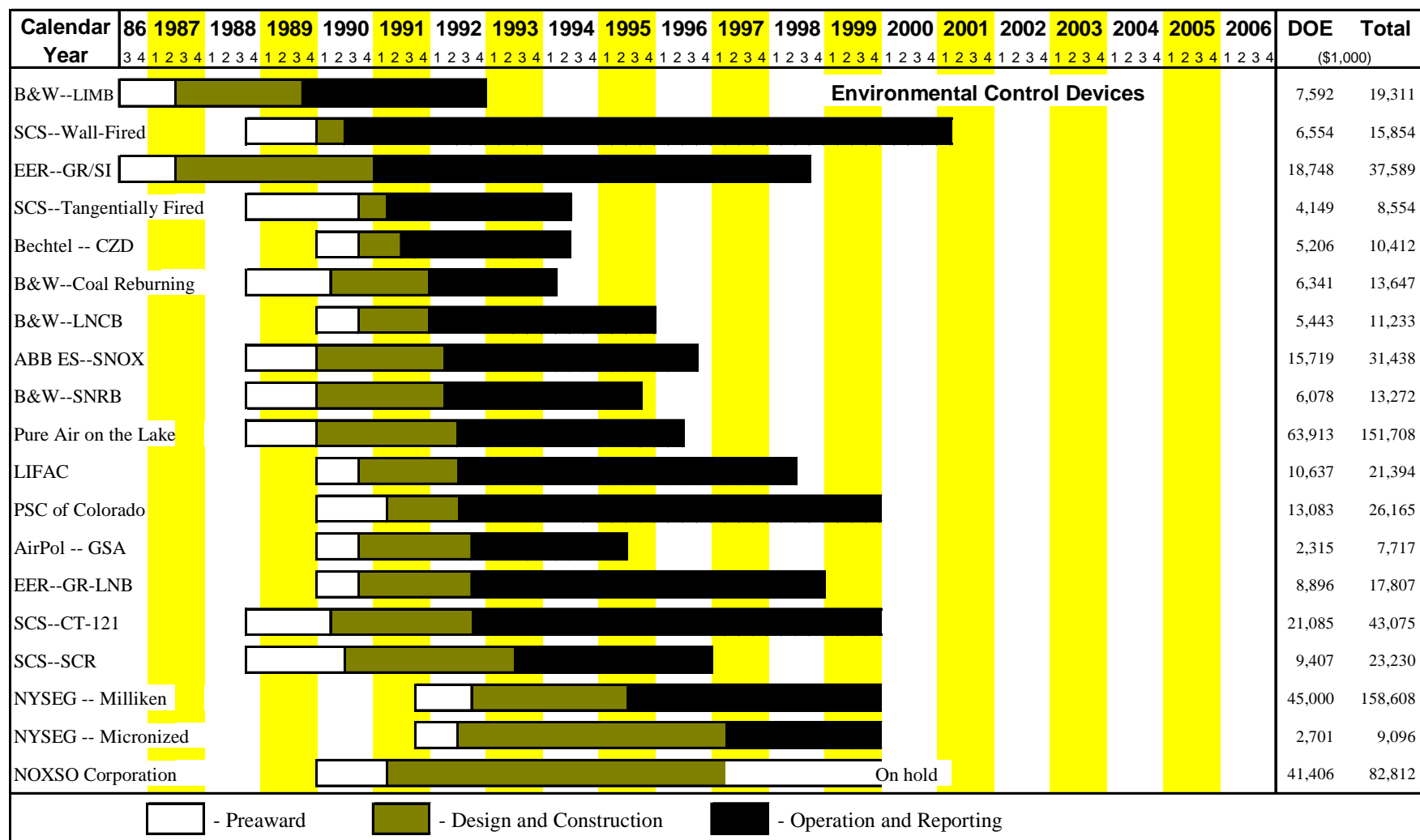
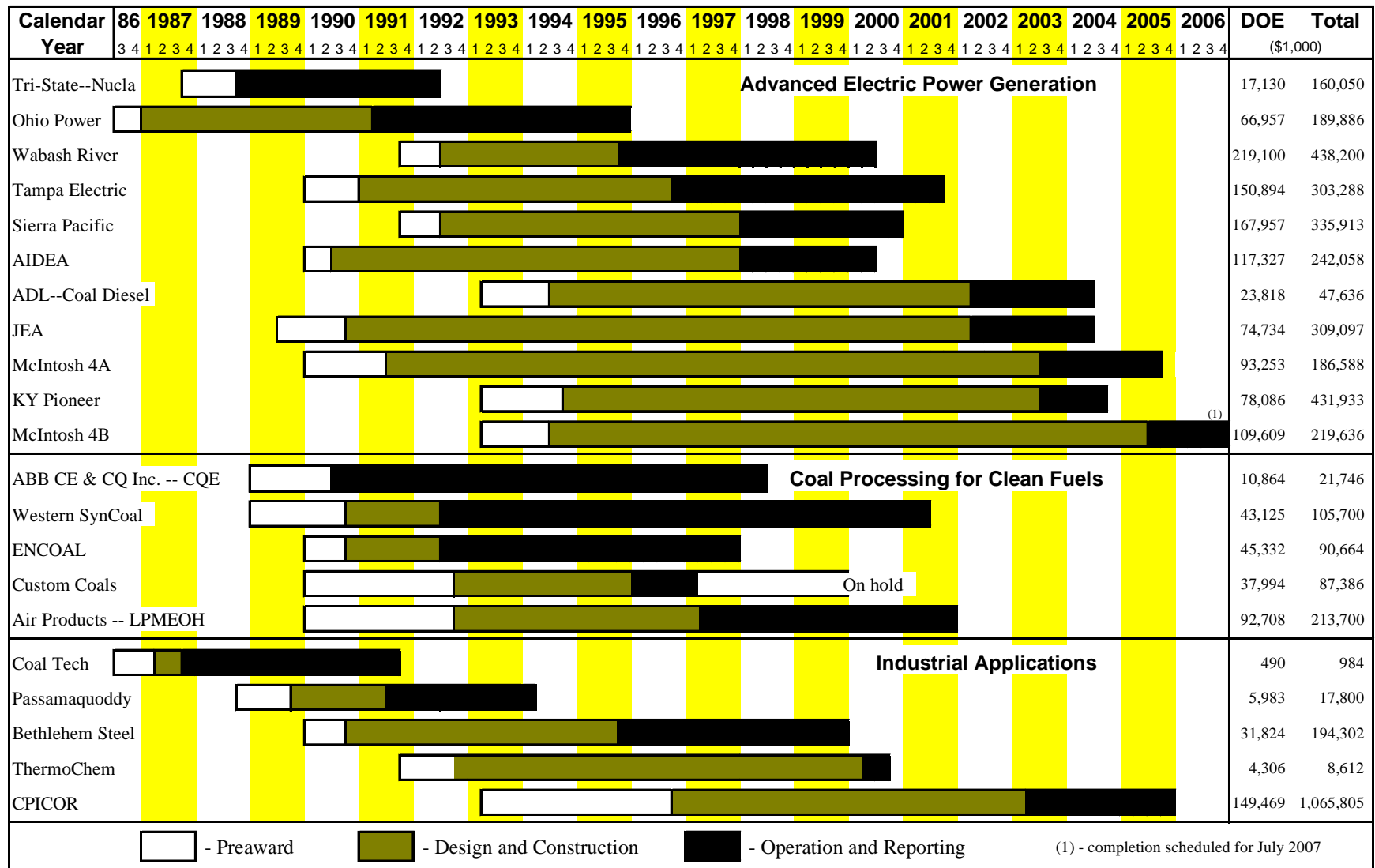


Exhibit 3-6 (continued)
CCT Project Schedules and Funding, by Application Category



Cost-Sharing

A characteristic feature of the CCT Program is the cooperative funding agreement between the participant and the federal government referred to as cost-sharing. This cost-sharing approach, as implemented in the CCT Program, was introduced in Public Law 99-190, An Act Making Appropriations for the Department of the Interior and Related Agencies for the Fiscal Year Ending September 30, 1986, and for Other Purposes. General concepts and requirements of the cost-sharing principle as applied to the CCT Program include the following elements:

- The federal government may not finance more than 50 percent of the total costs of a project;
- Cost-sharing by the project participants is required throughout the project (design, construction, and operation);
- The federal government may share in project cost growth (within the scope of work defined in the original cooperative agreement) up to 25 percent of the originally negotiated government share of the project;
- The participant's cost-sharing contribution must occur as project expenses are incurred and cannot be offset or delayed based on prospective project revenues, proceeds, or royalties; and
- Investment in existing facilities, equipment, or previously expended R&D funds are not allowed for the purpose of cost-sharing.

As previously discussed, Exhibit 3-1 summarizes the cost-sharing status by subprogram and by application category for the 40 active or completed projects.

In the advanced electric power generation category, which accounts for 53 percent of total project costs, participants are contributing 61 percent of the funds. Cost-sharing by participants for environmental control devices, coal processing for clean fuels, and industrial applications categories is 58 percent, 56 percent, and 85 percent, respectively. For the overall program, participants are contributing 66 percent of the total funding, or \$1.7 billion more than the federal government.

Recovery of Government Outlays (Recoupment)

The policy objective of DOE is to recover an amount up to the government's financial contribution to each project. Participants are required to submit a plan outlining a proposed schedule for recovering the government's financial contribution. The solicitations have featured different sets of recoupment rules.

Under the first solicitation, CCT-I, repayment was derived from revenue streams that include net revenue from operation of the demonstration plant beyond the demonstration phase and the commercial sale, lease, manufacture, licensing, or use of the demonstrated technology. In CCT-II, repayment was limited to revenues realized from the future commercialization of the demonstrated technology. The government's share would be 2 percent of gross equipment sales and 3 percent of the royalties realized on the technology subsequent to the demonstration.

The CCT-III repayment formula was adjusted to 0.5 percent of equipment sales and 5 percent of

royalties. Limited grace periods were allowed on a project-by-project basis. A waiver on repayment may be sought from the Secretary of Energy if the project participant determines that a competitive disadvantage would result in either the domestic or international marketplace. The recoupment provisions for CCT-IV and CCT-V were identical to those in CCT-III.

As of September 30, 1999, five projects have made repayments to the federal government: Nucla CFB Demonstration Project (Tri-State Generation and Transmission Association, Inc.); Full-Scale Demonstration of Low-NO_x Cell Burner Retrofit (The Babcock & Wilcox Company); Development of the Coal Quality Expert™ (ABB Combustion Engineering, Inc. and CQ Inc.); 10-MWe Demonstration of Gas Suspension Absorption (AirPol, Inc.); and the Advanced Flue Gas Desulfurization Demonstration Project (Pure Air on the Lake, L.P.).

In September 1997, the CCT Program office issued a report entitled *Recoupment Lessons Learned — Clean Coal Technology Demonstration Program*. The report: (1) reviewed the lessons learned on "recoupment" during the implementation of the CCT Program; (2) addressed recommended actions set forth in General Accounting Office (GAO) Report RCED-92-17, GAO Report RCED-96-141, and Inspector General Audit Report IG-0391 relative to "recoupment"; and (3) provided input into DOE deliberations on "recoupment" policy.